4.20 Growth-Inducing Effects

4.20.1 Introduction

Both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) require consideration of a project's growth inducement potential as a possible way in which a project might result in indirect environmental effects.

NEPA Definition of Growth Inducement

The Council on Environmental Quality NEPA Regulations require federal agencies to address the potential indirect impacts of a proposed action in preparing environmental assessments. Indirect effects are reasonably foreseeable effects that may occur beyond the immediate timeframe of a proposed action or outside the immediate vicinity of the action area. These effects "may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate" (CFR Section 40 1508.8 [b]).

CEQA Definition of Growth Inducement

The CEQA *Guidelines* state that an environmental impact report (EIR) should discuss the ways in which a proposed project may induce growth (Section 15126.2[d]). Growth inducement is defined by the CEQA *Guidelines* as:

> *[T]he ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth ... It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

A project can have a direct effect on population growth if it involves construction of substantial new housing. A project can have indirect growth-inducement potential if it would (1) establish substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or otherwise stimulate economic activity; or (2) remove an obstacle to additional growth and development, such as removing a constraint to or increasing the capacity of a required public service. For example, an increase in the capacity of utility or road infrastructure could allow either new or additional development in the surrounding area.

Approach

The following section reviews the potential for the project, under each of the four project alternatives, to induce growth. The focus of the discussion is the extent to which an alternative could provide additional water supply to one or more Bay Area water agencies that might support additional growth.

4.20.2 Growth-Inducement Potential

Overview

None of the project alternatives involves the construction of new housing; therefore none would be directly growth inducing. Furthermore, the project, under any of the four project alternatives, would not indirectly induce growth related to establishment of substantial new permanent employment opportunities such as those created by development of commercial, industrial, or governmental enterprises; expansion of the Los Vaqueros Reservoir system would create only a few additional, permanent jobs (less than 10).

However, under some project alternatives, the project might remove an obstacle to growth by improving the reliability of water supply to one or more of the three South Bay water agencies: Alameda County Water District (ACWD), Alameda County Flood Control and Water Conservation District – Zone 7 (Zone 7), and Santa Clara Valley Water District (SCVWD); and to the Contra Costa Water District (CCWD). This section evaluates the extent to which the project alternatives could remove water supply reliability as an obstacle to growth and therefore have indirect growth-inducement potential.

Improving Supply Reliability

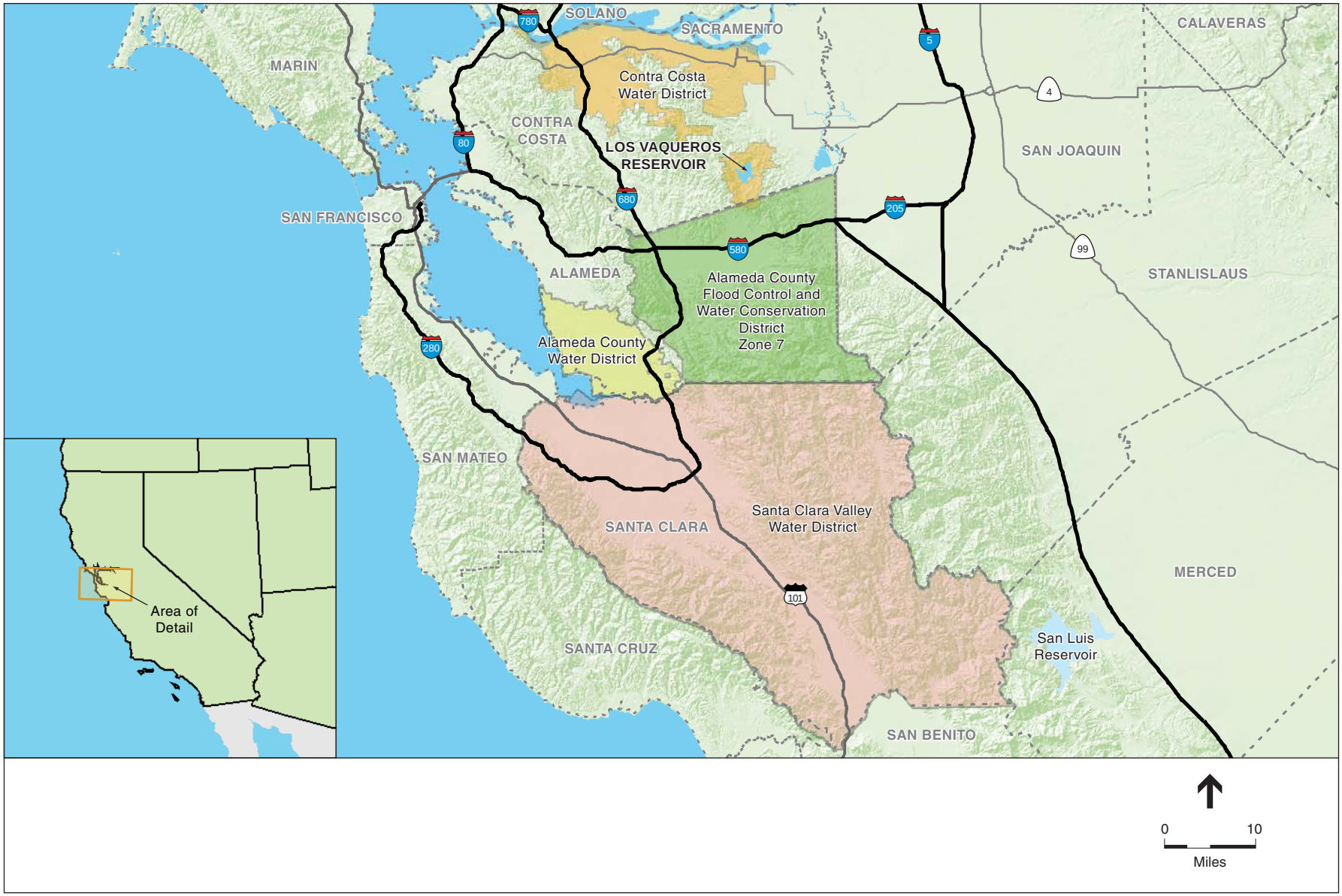
As described in Chapter 1, Purpose and Need/Project Objectives, two primary objectives pertain to all of the project alternatives: to use an expanded Los Vaqueros Reservoir to develop water supplies for environmental water management (Environmental Water Management) and to increase water supply reliability for Bay Area water providers (Water Supply Reliability). Water supplies for Environmental Water Management would not induce growth. However, increasing water supply reliability for Bay Area water providers does have the potential to remove an obstacle to growth.

Under each alternative, project operations are designed to provide some level of improvement in water supply reliability to the three South Bay water agencies or CCWD (see **Figure 4.20-1**).

By design, Alternative 1 would provide for the greatest improvement of water supply reliability. The water supply reliability improvements provided by the proposed project are categorized as follows:

- *Delta Supply Restoration* – The new and enlarged Los Vaqueros Reservoir system would be used to partially restore delivery reductions to the South Bay water agencies that have occurred and are expected to continue to occur due to regulatory restrictions at the State Water Project (SWP) and Central Valley Project (CVP) Delta export pumps.

- *Dry-Year Storage* – Additional storage in the expanded Los Vaqueros Reservoir would be used to meet dry-year needs for CCWD and the South Bay water agencies. Subsequently, the need to purchase supplemental dry-year supplies, activate dry-year exchange programs, or institute drought management measures would also be reduced. This would allow storage of water in wet periods for use in dry periods.



SOURCE: USGS, 1993 (base map); and ESA, 2008

Los Vaqueros Reservoir Expansion Project EIS/EIR . 201110

Figure 4.20-1

CCWD and Water Districts Served by SWP's South Bay Aqueduct

- *Emergency Storage* – Additional storage in the expanded Los Vaqueros Reservoir would be available for delivery to Bay Area water agencies through the South Bay Connection or existing interties in the event of a levee failure, chemical spill, or other emergency.

Alternative 1

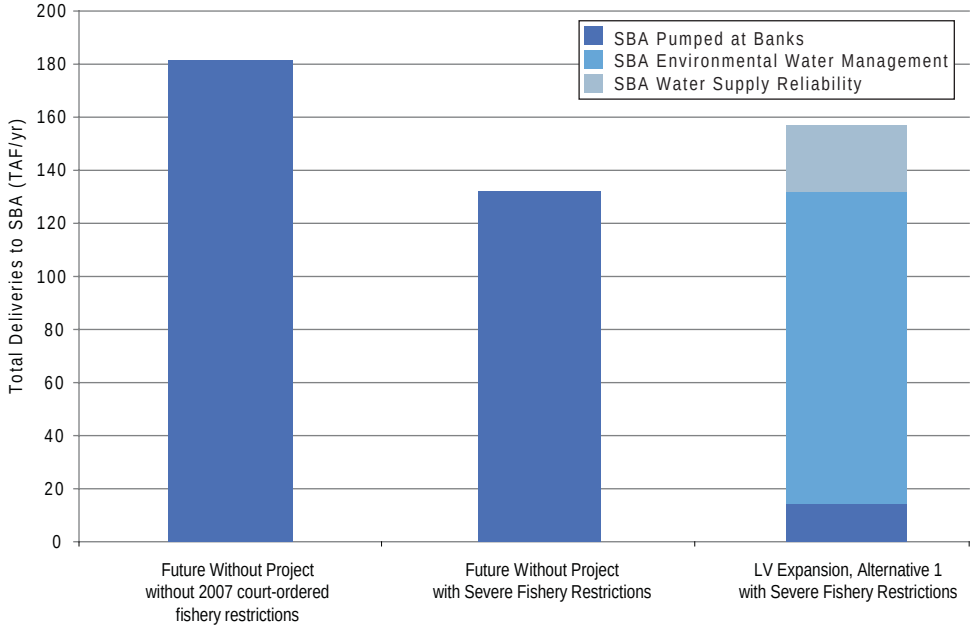
Water Supply Reliability Improvements Provided by the Project

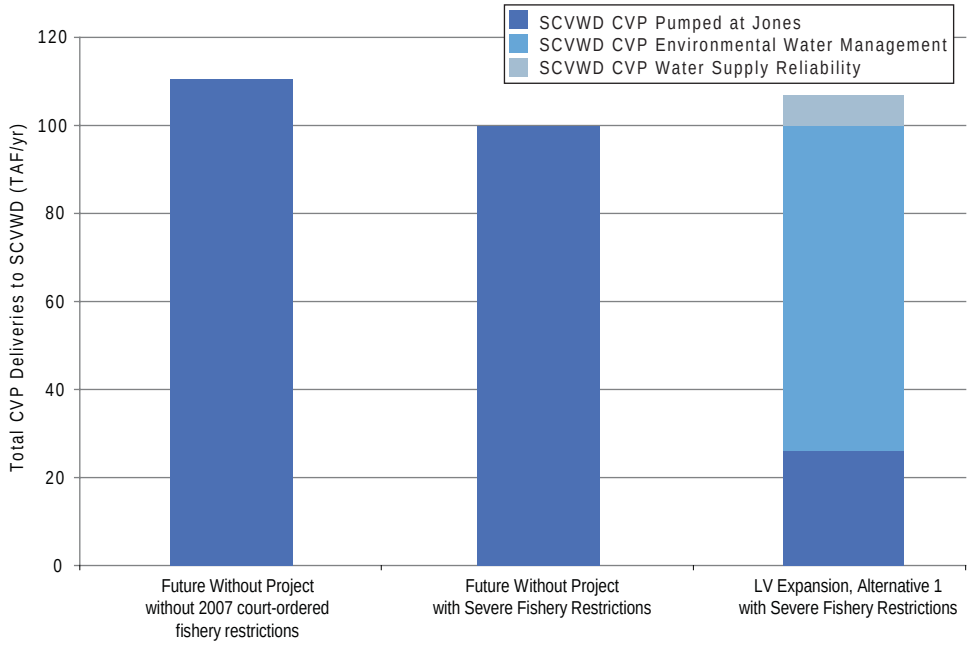
Under Alternative 1, as described in Section 3.4, Action Alternatives, operations to increase water supply reliability would include a combination of Delta Supply Restoration, Dry-Year Storage and Emergency Storage. The water supply reliability and other benefits of Alternative 1 are summarized in Table 4.2-4 in Section 4.2, Delta Hydrology and Water Quality.

Anticipated Future Water Deliveries

With Delta Supply Restoration and Dry-Year Storage operations, direct diversions and stored water supplies would be used to partially offset delivery reductions to the South Bay water agencies that have occurred and are expected to continue to occur due to regulatory restrictions at the SWP and CVP Delta export pumps. As discussed in Section 4.2, two scenarios for future pumping restrictions are evaluated in this EIS/EIR: a moderate fishery restrictions scenario and a severe fishery restrictions scenario. Model studies were also performed without assuming either of these increased levels of restrictions on Delta exports, to estimate Delta export pumping in the future without assuming the 2007 court-ordered fishery restrictions to be in effect. **Figure 4.20-2** illustrates the relationship between modeled Delta exports for South Bay water agencies with and without the Delta fishery restrictions. The severe restrictions scenario is considered in this analysis of growth inducement potential because under this scenario, Alternative 1 has the potential to restore more of the Delta supply deliveries to the South Bay water agencies than under the moderate restrictions scenario.

As shown in Figure 4.20-2, modeling of future conditions without assuming the moderate or severe fishery restrictions on Delta exports shows water contractors on both the SWP and CVP systems would have received more supply from these two water systems in the future (on a long-term average annual basis) than they can now expect with such restrictions in place. Estimated future long-term annual average SWP deliveries to the South Bay water agencies, without the fishery restrictions imposed in 2007 and without the Los Vaqueros Reservoir Expansion Project, would be about 180 thousand acre-feet (TAF). Assuming severe fishery restrictions, future projected long-term annual average SWP deliveries to the South Bay water agencies could be about 130 TAF. As shown in the graph, under Alternative 1, long-term average annual SWP deliveries to the South Bay water agencies would be restored to about 155 TAF. This delivery amount is less than deliveries estimated for the future without the 2007 fishery restrictions. Similarly, projected future long-term annual average CVP deliveries to SCVWD, without the fishery restrictions imposed in 2007 and without the Los Vaqueros Reservoir Expansion Project, were estimated to be about 110 TAF per year, on average, and the assumed severe fishery restrictions reduce the estimated future CVP deliveries to SCVWD to about 100 TAF per year, on average. As shown in Figure 4.20-2, the average annual CVP deliveries to SCVWD would be restored to about 107 TAF in Alternative 1, again less than the deliveries projected for the future without the 2007 fishery restrictions.





SOURCE: CCWD, 2008

Figure 4.20-2
Water Supply Reliability
(2030 Level of Development)

Assuming severe fishery restrictions, Delta Supply Restoration and Dry-Year Storage operations together could provide a long-term annual average benefit of about 30 TAF for the South Bay water agencies and about 25 TAF annually in a 6-year drought. Dry-year storage would also be available to CCWD under this alternative. CCWD's dry-year supply benefit would be up to 20 TAF of stored water at the beginning of a drought. Refer to Section 4.2 for more information on the deliveries made under Alternative 1.

The maximum amount of Emergency Storage that could be available to the Bay Area region under Alternative 1 would be about 210 TAF (under the severe fishery restrictions scenario). This stored water would be available during shortages caused by natural disasters or other emergencies. Emergency water supplies would be delivered through either the South Bay Connection or existing interties between water agencies.

Historical Water Deliveries

Table 4.20-1 presents historical total deliveries of Delta water by the SWP to the South Bay water agencies over a 12-year period from 1995 through 2006 (prior to the fishery restrictions imposed in 2007). As shown, total deliveries from the Delta through the South Bay Aqueduct (SBA) to these three agencies over this period ranged from 76.6 TAF to 220.4 TAF, and averaged about 152 TAF. In dry and below-normal years (2001, 2002, and 2004), deliveries averaged about 138 TAF.

TABLE 4.20-1
HISTORICAL SWP DELIVERIES TO THE SOUTH BAY WATER AGENCIES (acre-feet)

Year	Water Year Type[1]	Table A[2]	Total SWP Deliveries by Agency[3]			Total Deliveries
		Contract	ACWD	SCVWD	Zone 7	
1995	Wet	184,000	17,793	30,091	28,756	76,640
1996	Wet	186,000	19,662	18,903	89,850	128,415
1997	Wet	188,000	24,063	27,522	95,601	147,186
1998	Wet	188,000	19,075	17,941	63,410	100,426
1999	Wet	188,000	37,952	48,910	82,945	169,807
2000	Above Normal	210,000	35,978	58,617	101,988	196,583
2001	Dry	220,000	18,004	34,409	77,922	130,335
2002	Dry	220,000	27,811	53,261	62,186	143,258
2003	Above Normal	220,000	36,590	45,450	108,981	191,021
2004	Below Normal	222,619	27,884	52,364	59,458	139,706
2005	Above Normal	222,619	44,599	47,512	128,249	220,360
2006	Wet	222,619	43,079	61,403	74,637	179,119

1 Water year type shown is for the Sacramento Valley.
2 This is the amount of Table A water under contract to the South Bay water agencies; the amount available in a given year varies based on water year type and other factors.
3 Deliveries by Agency show the total amount of water delivered by the SWP to the South Bay water agencies. Deliveries include SWP Contract Table A supplies, Article 21 deliveries, Article 56 deliveries, and other deliveries including transfers, exchanges, and other non-SWP water delivered through SWP facilities.

SOURCE: Compiled by DWR, C. Spencer, 2008.

As shown in Figure 4.20-2, long-term average annual SWP deliveries to the South Bay water agencies under Alternative 1, would be restored to about 155 TAF under the future conditions modeled. This estimated delivery amount is slightly higher than the historical long-term average annual deliveries of 152 TAF of water delivered from the Delta to the South Bay water agencies through the SWP.

Table 4.20-2 presents historical total deliveries by the CVP to SCVWD over the same 12-year period from 1995 through 2006. Deliveries to SCVWD have ranged from about 64.2 TAF to 150.5 TAF, averaging 105 TAF over this period. SCVWD's CVP contract is for 152,500 acre feet and is used to meet both urban and agricultural demand. As for the SWP deliveries described above, estimated deliveries of Delta water to SCVWD through the CVP under Alternative 1 would be slightly higher (107 TAF) than the historical long-term average annual deliveries (105 TAF).

TABLE 4.20-2
HISTORICAL CVP DELIVERIES TO SCVWD (acre-feet)

Year	Water Year Type[1]	Deliveries to SCVWD[2]
1995	Wet	108,603
1996	Wet	100,783
1997	Wet	91,346
1998	Wet	78,679
1999	Wet	116,933
2000	Above Normal	91,372
2001	Dry	150,516
2002	Dry	134,346
2003	Above Normal	106,409
2004	Below Normal	126,631
2005	Above Normal	89,149
2006	Wet	64,230

1 Water year type shown is for the Sacramento Valley.
2 Deliveries to SCVWD show the total amount of water delivered by the CVP to SCVWD and could include transfers, exchanges or other water in addition to contract supply.

SOURCE: USBR Central Valley Operations Office, Reports of Operations, 2008.

Table 4.20-3 presents historical total Delta diversions for CCWD over the 12-year period from 1995 through 2006. CCWD's total Delta diversions have ranged from about 108.4 TAF to 206.5 TAF, averaging about 131.6 TAF over this period. Alternative 1 would provide CCWD with 20 TAF of additional storage for use in drought periods.

Discussion

As summarized in the previous section, Alternative 1 could restore some but not all of the future Delta water deliveries from the SWP and CVP previously expected by the South Bay Water agencies. At this time, the South Bay water agencies have not committed to participating in the project alternatives and have not specified an amount of water to be provided to them. However, for purposes of this impact analysis, it is acknowledged that if one or more of these agencies were to

TABLE 4.20-3
HISTORICAL CVP DELIVERIES TO CCWD (acre-feet)

Year	Water Year Type[1]	CVP Deliveries	Total CCWD Delta Diversions[2]
1995	Wet	93,889	108,805
1996	Wet	105,184	116,841
1997	Wet	113,747	121,555
1998	Wet	88,456	206,461
1999	Wet	83,541	108,421
2000	Above Normal	94,530	128,655
2001	Dry	92,005	114,716
2002	Dry	82,357	127,980
2003	Above Normal	81,579	149,406
2004	Below Normal	93,634	129,820
2005	Above Normal	82,682	136,548
2006	Wet	91,826	129,819

1 Water year type shown is for the Sacramento Valley.
2 Total CCWD Delta Diversions includes the total amount of water delivered by the CVP to CCWD, water transfers, local water rights and diversions of surplus water under CCWD's water rights for the existing Los Vaqueros Reservoir.

SOURCE: CCWD, 2008

participate in Alternative 1, they would receive some improved supply reliability compared to existing and future conditions without the project.

It is not possible to determine exactly how each agency might make use of the water supply reliability benefit provided under Alternative 1. Each of the three South Bay water agencies has multiple sources of supply that they manage to meet the needs of the customers within their service areas. Generally, each agency manages a combination of local surface water and groundwater resources along with surface water supply imported from the Delta. They also each use a combination of surface water and groundwater storage to reserve water supply for drought periods and other times of potential supply shortage.

A review of the Urban Water Management Plans (UWMP) for these three agencies (ACWD, 2005; SCVWD, 2005; Zone 7, 2005) showed that the total projected 2030 water demand in their service areas is: ACWD – 79,100 acre feet (AF); Zone 7 – 69,370 AF; and SCVWD – 448,200 AF, for a total of 596,670 AF. **Table 4.20-4** shows the "normal year" supply from SWP and CVP sources identified in each agency's 2005 UWMP. A "normal year" is defined as "a year in the historical sequence that most closely represents median runoff levels and patterns. This is the average supply available over the period from 1967 forward, given currently existing facilities and institutional arrangements" (SCVWD, 2005). Review of Table 4.20-4 indicates that the South Bay water agencies anticipate obtaining between 41 percent (ACWD) and 65 percent (Zone 7) of their annual water supply from the Delta in 2030.

TABLE 4.20-4
NORMAL YEAR WATER SUPPLY ANTICIPATED FROM DELTA SOURCES BY WATER DISTRICT

	Normal Year 2010 (acre-feet)	Percentage of Respective Agency Supply	Normal Year 2030 (acre-feet)	Percentage of Respective Agency Supply
Alameda County Water District	32,700	40%	36,000	41%
Zone 7	63,900	70%	60,900	65%
Santa Clara Valley Water District	197,400	52%	197,400	44%
Total Anticipated Future Delta Supply for South Bay water agencies	**294,000**		**294,300**	
Contra Costa Water District	211,500	89%	213,000	89%

SOURCE: Contra Costa Water District 2005 UWMP; Alameda County Water District 2005 UWMP; Zone 7 2005 UWMP; SCVWD 2005 UWMP; ESA 2008.

As shown in Table 4.20-4 the South Bay water agencies anticipate receiving about 294 TAF of Delta water in 2030. The estimate of Delta deliveries to South Bay water agencies shown in Figure 4.20-2 without assuming moderate or severe Delta fishery restrictions is about 290 TAF at the 2030 level of development (about 180 TAF through the SBA system, plus 110 TAF through the CVP system). The modeling estimate of future deliveries of 290 TAF per year for Delta water supply among the South Bay water agencies is slightly lower than that projected in the UWMP for these agencies, but is approximately comparable.

Alternative 1 could restore, on average, about 30 TAF of Delta supply to the three South Bay water agencies. This represents about 10 percent of the total Delta supply these agencies had been expecting from Delta supply sources (294.3 TAF), as reflected in their current UWMPs, and about 5 percent of their total water demands (596.7 TAF). Alternative 1 would not provide these agencies with a new source of water or an amount beyond that which they had previously planned to receive. However, on average, this alternative would provide slightly more water than the average annual amount these agencies historically had received.

During a drought, this additional water could reduce the amount of supplemental water or the level of demand reduction necessary. The supply restoration provided under Alternative 1 would not be substantial and is well within the range of demands and supplies for which there are current approved plans.

Alternative 1 would provide 20 TAF of additional storage to CCWD at the beginning of a drought. With this additional dry-year supply, CCWD could reduce its purchase of supplemental supplies and could reduce the severity of drought management (rationing) measures imposed on its customers. In 1996, the CCWD Board of Directors adopted the Future Water Supply Study (described in Chapter 2), including a preferred alternative to provide their customers a high-quality, reliable supply of water through 2040. The preferred alternative included continued reliance on the CVP, conservation, recycling, and water transfers. In 2002, the Future Water Supply Study was updated and extended through 2050. A key goal of the Future Water Supply Study

implementation plan is to meet 100 percent of demand in all but the driest years, and to meet at least 85 percent of normal year demands in a drought. The remaining 15 percent of demand would be met through demand management, including mandatory rationing, transfers, and spot market water purchases. The additional 20 TAF from Alternative 1 would enable CCWD to reduce rationing requirements, transfers, and/or spot market water purchases during a drought.

CCWD certified a programmatic EIR on its Future Water Supply Implementation in 1999 and received a biological opinion from USFWS in 2000 covering the secondary effects of growth related to implementation of the Future Water Supply Study. The dry-year water supplied to CCWD from Alternative 1 is consistent with the Future Water Supply Study, the Future Water Supply Implementation EIR and the related USFWS Biological Opinion.

Emergency storage does not have a growth-inducing potential because it would not be used to meet the demands of any particular agency or area, but rather would be made available in the event of a natural disaster or other emergency based on needs and conditions specific to the emergency.

Alternative 2

Under Alternative 2, operations to increase Water Supply Reliability would include Dry-Year Storage and Emergency Storage. It does not include a specific increment of water for Delta Supply Restoration as under Alternative 1. Operating Alternative 2 for Dry-Year Storage would increase the amount of water available to CCWD in dry years by up to 20 TAF at the start of a drought. About 200 TAF of emergency storage would be available to the Bay Area region under Alternative 2, assuming severe fishery restrictions. This water would be available during shortages caused by natural disasters or other emergencies. Emergency water supplies would be delivered through either the South Bay Connection or existing interties between water agencies.

Alternative 2 does not include the Delta Supply Restoration operation and does not have the potential to induce growth in the South Bay water agencies' service areas. The analysis and conclusions regarding the potential for the Dry-Year Storage operation to affect growth in the CCWD service area are the same as presented for Alternative 1.

Emergency storage does not have a growth-inducing potential because it would not be used to meet the demands of any particular agency or area, but rather would be made available in the event of a natural disaster or other emergency based on needs and conditions specific to the emergency.

Alternative 3

Under Alternative 3, operations to increase Water Supply Reliability would include only Dry-Year Storage and Emergency Storage operations with no increment of water from Delta Supply Restoration operations as provided under Alternative 1. Operating for Dry-Year Storage would increase the amount of water available to CCWD in dry years by up to 20 TAF at the start of a drought. About 220 TAF of emergency storage would be available to the Bay Area region under Alternative 3, assuming severe fishery restrictions. This water would be available

during shortages caused by natural disasters or other emergencies. Emergency water supplies would be delivered through existing interties between water agencies.

Alternative 3 does not have the South Bay Connection and does not have the potential to induce growth in the South Bay water agencies' service areas. The analysis and conclusions regarding the potential for the Dry Year Storage operation to affect growth in the CCWD service area are the same as presented for Alternative 1.

Emergency storage does not have a growth-inducing potential because it would not be used to meet the demands of any particular agency or area, but rather would be made available in the event of a natural disaster or other emergency based on needs and conditions specific to the emergency.

Alternative 4

Under Alternative 4, operations to increase Water Supply Reliability would include Dry-Year Storage and Emergency Storage. Operating for Dry-Year Storage would increase the amount of water available to CCWD and other participating Bay Area water agencies to which CCWD can deliver water directly through interties or indirectly by exchange. The increase in available water would be as much as 60 TAF at the start of a drought. About 115 TAF of emergency storage would be available to the Bay Area region under Alternative 4, assuming severe fishery restrictions. This water would be available during shortages caused by natural disasters or other emergencies. Emergency water supplies would be delivered through existing interties between water agencies.

As described above for Alternative 1, CCWD is implementing its Future Water Supply Study, relying on CVP supplies, conservation, recycling, and water transfers to meet future demand. CCWD's goal, according to the Future Water Supply Study, is to meet 100 percent of demand in all but the driest years and to provide at least 85 percent of demand in a drought. The 60 TAF of dry-year supply storage provided to CCWD under Alternative 4 would reduce the extent to which CCWD would need to acquire water transfers to meet future demand in both normal and drought conditions, and would reduce the need for rationing and spot market purchases during droughts. The dry-year water supplied to CCWD from Alternative 4 is consistent with the Future Water Supply Study, the Future Water Supply Implementation EIR, and the related USFWS Biological Opinion.

Emergency storage does not have a growth-inducing potential because it would not be used to meet the demands of any particular agency or area, but rather would be made available in the event of a natural disaster or other emergency based on needs and conditions specific to the emergency.

4.20.3 Secondary Effects of Growth

The water supply reliability provided by Alternative 1 would restore some amount of the water the South Bay water agencies had previously expected and planned to receive from the Delta in the future under their existing contracts with the state and federal water agencies. In addition, all project alternatives would provide additional water reliability to CCWD. Each of these agencies has prepared a long-term future water supply plan; Delta water supply is a central component in each. These long-term water supply plans have been designed to provide adequate water supply to meet the needs of both existing customers and the growth that has been planned in each service area by the respective city and county land use agencies. These plans identify water supplies needed in the future to provide for both normal-year water demands as well for drought periods and include the following:

- ACWD, Integrated Resource Plan and 1996-2001 Capital Improvements Program, 1998.
- ACWD, Urban Water Management Plan, 2005.
- CCWD, Future Water Supply Implementation, 1999.
- CCWD, Urban Water Management Plan, 2005.
- SCVWD, Integrated Water Resources Planning Study 2003, Adopted December 2005.
- SCVWD, Urban Water Management Plan, December 2005.
- SCVWD Water Utility Enterprise Report – Annual Report on the Protection and Augmentation of the Water Supplies of the District, October 2007.
- Zone 7 Water Agency, 2008/09 Capitol Improvement Program, Ten-Year Water System Plan, Five-Year Flood Control System Plan, Adopted October 17, 2007.
- Zone 7 Water Agency, Urban Water Management Plan, 2005.

Water that could be provided to these agencies is reflected in the adopted land use plans for the areas to be served. The potential environmental effects of this future planned growth have been evaluated and fully disclosed previously in the CEQA environmental documents prepared on the long-term water supply plans for the South Bay water agencies and CCWD.

- ACWD, Integrated Resources Plan and 1996-2001 Capital Improvement Program, May 15, 1998, State Clearinghouse # 97122003.
- CCWD, Future Water Supply Implementation Final EIR, January 22, 1999, State Clearinghouse # 97072064.
- Zone 7 Water Agency, Water Supply Planning Program Draft EIR, January 1999.